

## CURRICULUM VITAE

Includes the list of publications

**Name:** Tadeusz Michał Litak

**Daily first name:** Tadeusz

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**Date of birth:** April 5, 1978

**Place of birth:** Kraków, Poland

**Nationality:** Polish

Married, wife: Yoko Yamatogi (Japanese nationality). No children

### RESEARCH INTERESTS

*In Computer Science:* Applications of equational logic. Query languages for relational, semi-structured or active databases (particular interest in well-behaved fragments of XPath and XQuery). Termination analysis. *In mathematics:* Algebraic, topological and Kripke semantics for modal, hybrid and superintuitional logics (completeness, definability, persistence, duality theory ...). Boolean algebras with operators (cylindric algebras, relation algebras, dynamic algebras, modal algebras ...) and their subreducts. Extensions of lattices and idempotent semirings

### EMPLOYMENT HISTORY

- January 1, 2010–present: Postdoctoral Research Associate at the Department of Computer Science, University of Leicester. Project **Coalgebraic Logic: Expanding the Scope** supported by an EPSRC grant EP/G041296/1. Grant holder: Alexander Kurz.
- February 1, 2008–December 31, 2009: Postdoctoral Research Assistant at the Department of Computer Science and Information Systems (until July 29, 2009 named *School of Computer Science and Information Systems*), Birkbeck, University of London. Project **Reliable XML Message Management for Web Services** supported by an EPSRC grant EP/F002262/1. Grant holder: Sven Helmer. Also a member of the London Knowledge Lab
- May 1, 2007–January 31, 2008: a postdoctoral researcher (*Onderzoeker*) at the ILPS (Information and Language Processing Systems) group at the ISLA (Intelligent Systems Lab Amsterdam), Informatics Institute, UvA (University of Amsterdam) supported by the Rubicon program of the NWO (Netherlands Organization for Scientific Research). Fellowship won on the basis of a personal proposal **Algebraic Optimization of XPath Queries**. Grant number 680–50–0613. A short online description available at  
<http://www.nwo.nl/projecten.nsf/pages/2300137463>
- October 1, 2005–March 31, 2007: a postdoctoral researcher (*Kenkyuin*) at the Ono Laboratory, School of Information Science, JAIST (Japan Advanced Institute of Science and Technology) supported by the Jinzai Yosei (Fostering Talents) fund of Japan Science and Technology Agency (JST). First contract until March 2006, then renewed for one year. From April 1 to April 25 2007: special researcher (*Tokubetsu Kenkyuin*) at the same laboratory

## EDUCATION

### Diplomas, theses and PhD

September 22, 2005: Ph.D. *cum laude* in Information Science, Japan Advanced Institute of Science and Technology (JAIST)

Advisor: Professor Hiroakira Ono

Thesis: **An Algebraic Approach to Incompleteness in Modal Logic**

September 13, 2001: Magister (Master) of Philosophy, Jagiellonian University (UJ)

Advisor: Professor Andrzej Wroński

Thesis (in Polish): **Incomplete Intermediate Logics**

(At the time of my studies, Poland had not fully implemented the Bologna process introducing the Bachelor's degree. Therefore, the *Magister* was a first degree)

### Additional training

Midlands Graduate School 2009, Leicester, UK

PhD Training Programme at RelMiCS/AKA 2006

### Secondary school

V Liceum (Polish high school) in Kraków, 1993-1997, The Graduate of the Year award. Specialized mathematical profile: classes in mathematics and physics given by lecturers of the Jagiellonian University.

## ACADEMIC AWARDS AND GRANTS

Rubicon grant fellowship of the Netherlands Organization for Scientific Research (NWO), 2007–2008

Postdoctoral support of the Jinzai Yosei (Fostering Talents) fund of the Japan Science and Technology Agency (JST), 2005–2007

Monbukagakusho Scholarship, Japanese Ministry of Education, 2002–2005

JAIST Foundation Travel Grant, JAIST Foundation 2004, 2003

JAMS Travel Grant, Japan Association for Mathematical Sciences, 2003

MEN (Ministry of Education) Scholarship, Polish Ministry of Education, 2000–2001

## REFEREED PUBLICATIONS

### Journal publications

*Invited papers in (refereed) special journal issues*

[ja109] (with Balder ten Cate and Maarten Marx) *Complete axiomatizations for XPath fragments*. Invited to a special post-conference issue of **Journal of Applied Logic** (selected papers of Logic in Databases 2008 workshop) edited by Andrea Calí, Laks V.S. Lakshmanan and Davide Martinenghi, submitted

[bs107] *The non-reflexive counterpart of Grz*, **Bulletin of the Section of Logic**, vol. 36, No. 3–4, pp. 195–208, 2007: a special issue *In Honorem Hiroakira Ono* edited by Piotr Łukowski

*Regular journal papers*

[au08a] *Stability of The Blok Theorem*. **Algebra Universalis**, vol. 58, No. 4, pp. 373–384, 2008

[au08b] (with Tomasz Kowalski) *Completions of GBL algebras: negative results*. **Algebra Universalis**, vol. 58, No. 4, pp. 385–411, 2008

[s105] (with Frank Wolter) *All finitely axiomatizable tense logics of linear time flows are coNP-complete*. **Studia Logica**, vol. 81, No. 2, pp. 153–165, November 2005

[bs104] *Some remarks on superintuitionistic logic of chequered subsets*. **Bulletin of the Section of Logic**, vol. 33, No. 2, pp. 81–86, July 2004

[s104] *Modal incompleteness revisited*, **Studia Logica**, vol. 76, No. 3, pp. 329–342, April 2004

[rm102] *A continuum of incomplete intermediate logics*, **Reports on Mathematical Logic**, vol. 36, pp. 131–141, 2002

### Refereed conference/workshop proceedings papers

[lncs09] (with Sven Helmer) *On the termination problem for declarative XML message processing*. Proceedings of 20th International Conference on Database and Expert Systems Applications (DEXA 2009), eds. S.S. Bhowmick, J. Küng, and R. Wagner, **Lecture Notes in Computer Science 5690**, pp. 83–97, 2009

[lid08] (with Balder ten Cate and Maarten Marx) *Complete axiomatizations for XPath fragments*. Preliminary proceedings of Logic in Databases 2008 workshop, eds. A. Calí, L. Lakshmanan and D. Martinenghi. Superseded by [jal09] above

[entcs07] (with Balder ten Cate) *Topological perspective on the hybrid proof rules*. Proceedings of the International Workshop on Hybrid Logic (HyLo 2006), eds. P. Blackburn, T. Bolander, T. Braüner, V. de Paiva and J. Villadsen, **Electronic Notes in Theoretical Computer Science vol. 174**, No. 6, pp. 79–94, June 2007

[lncs06] *Algebraization of hybrid logic with binders*. Proceedings of 9th International Conference on Relational Methods in Computer Science, ed. R. A. Schmidt, **Lecture Notes in Computer Science 4136**, pp. 281–295, 2006

[aim106] *Isomorphism via translation*. Proceedings of **Advances in Modal Logic 2006**, College Publications, eds. I. Hodkinson and Y. Venema, pp. 337–355

[aim104] *On notions of completeness weaker than Kripke completeness*. Proceedings of **Advances in Modal Logic 2004**, King’s College Publications, eds. R. Schmidt, I. Pratt-Hartmann, M. Reynolds and H. Wansing, pp. 149–169, 2005

### NON-REFEREED PUBLICATIONS

#### Co-authored non-refereed invited papers

[m4m07] Co-author (with Gaëlle Fontaine) of an invited paper by Balder ten Cate *Some modal aspects of XPath*. Preliminary proceedings of Methods for Modalities 2007. Online versions available at

<http://staff.science.uva.nl/~bcate/papers/m4m07.pdf> and

<http://www.dcs.bbk.ac.uk/~tadeusz/papers/m4m4.pdf>

[jp07] Co-author of an invited paper by Balder ten Cate and Maarten Marx. *A complete axiomatization for Core XPath 1.0*. Liber Amicorum Jan Paredaens, Antwerpen 2007. Superseded by [jal09] and [lid08] above

#### Technical Reports

[illc07] (with Balder ten Cate) *The importance of being discrete*. ILLC Prepublication Series, PP–2007–39

[rims06] (with Tomasz Kowalski) *Completions of GBL algebras and acyclic modal algebras: negative results*. Publications of the Research Institute for Mathematical Sciences (RIMS), Kyoto University, November 2006

[jaist05] *Mathematical foundations for self-referential sentences*, JAIST Research Report IS–RR–2005–005–001

Publications in the proceedings of the MLG (Mathematical Logic Group) meetings in Japan: 36th (Kinosaki, 2002), 37th (Shizuoka, 2003), 38th (Gamagori, 2004), 39th (Gamagori, 2005), 40th (Yufuin, 2006)

## CHOSEN TALKS AT INTERNATIONAL CONFERENCES

(refereed, reverse chronological order. Does not include conferences/workshops whose proceedings were included in the publication list above)

- 4th International Conference on Topology, Algebra and Categories in Logic, Amsterdam, July 7–11, 2009 (*Relational lattices: an introduction*, joint work with S. Mikulás and J. Hidders)
- Trends in Logic IV, Poland, Toruń, September 1–September 4, 2006 (*Minimal extensions and modal consequence*)
- Algebraic and Topological Methods in Non-Classical Logics II, Spain, Barcelona, June 15–18, 2005 (*On strong completeness*)
- UNILOG 2005, Switzerland, Montreux, March 31–April 03, 2005 (*The Blok incompleteness theorem: how to generalize it and why*)
- International Conference on Algebraic and Topological Methods in Non-classical Logics, Georgia, Tbilisi 2003 (*Subdirect irreducibility, complete BAOs and incompleteness*)
- XIIth International Congress of Logic, Methodology and Philosophy of Science, Spain, Oviedo 2003 (*Tense logics which are maximal consistent, decidable and as incomplete as you may imagine*)
- Logic Colloquium, ASL European Summer Meeting, Germany, Münster 2002 (*Modal incompleteness revisited*). Abstract published in **Bulletin of Symbolic Logic** vol. 9, No. 1, 2003
- 4th International Tbilisi Symposium on Logic, Language and Computation, Georgia, Borjomi 2001 (*A continuum of incomplete intermediate logics*)

## CHOSEN INVITED PRESENTATIONS AND TALKS

(reverse chronological order)

### In the UK:

- ALCOP 2010: The Dutch-British workshop on Algebra & Coalgebra meet Proof Theory, Imperial College, January 25–26, 2010
- Seminar of the Verification and Testing group, Department of Computer Science, University of Sheffield, June 18, 2009
- LogIC Seminar, Imperial College, November 27, 2008
- Computer Science Internal Seminar, University of Leicester, March 13, 2008.

### In Japan:

- CVS-AIST Computer Language Colloquium (CLC), CVS-AIST, Osaka, January 11, 2007. By invitation of Koki Nishizawa (AIST)
- NII Logic Seminar, National Institute of Informatics, Tokyo, December 12, 2006. By invitation of Kazushige Terui (NII)
- 17th ALGI Research Meeting, Nara Women's University, October 12–13, 2006. By invitation of Toshinori Takai and Hitoshi Furusawa (Kagoshima University).
- Workshop *Mathematical logic and its applications*, Research Institute for Mathematical Sciences (RIMS), Kyoto University, 31 May–2 June 2006. By invitation of Toshiyasu Arai (Kobe University)

- Workshop *Modern Plural Aspects of Modal Logics: from a semantical point of view*, 29th PaSTA Research Meeting, Graduate School of Letters, Kyoto University, October 15, 2005. By invitation of Katsuhiko Sano (Kyoto University)

## PROFESSIONAL ACTIVITIES

A referee for

- **Mathematical Logic Quarterly**
- **Journal of Logic, Language and Information**
- **Review of Symbolic Logic**
- **Notre Dame Journal of Formal Logic**
- **ACM Transactions on Computational Logic**
- **Studia Logica**
- Advances in Modal Logic (2006, 2008)
- 27th International Symposium on Theoretical Aspects of Computer Science (STACS 2010)
- 18th EACSL Annual Conference on Computer Science Logic (CSL 2009)
- 28th ACM SIGMOD/PODS International Conference on Principles of Database Systems (PODS 2008)
- 3rd International Workshop on Database Technologies for Handling XML Information on the Web (DataX'08)
- 14th International Conference on Logic for Programming Artificial Intelligence and Reasoning (LPAR 2007)
- 11th International Symposium on Database Programming Languages (DBPL 2007)
- 20th International Workshop on Description Logics (DL-2007)
- International Conference on Order, Algebra and Logic, Nashville 2007 (OAL 2007)
- Proceedings of Trends in Logic IV, Toruń 2006
- Proceedings of 9th Asian Logic Conference, Novosibirsk 2005
- 6th International Tbilisi Symposium on Language, Logic and Computation, Batumi 2005—conference and proceedings

## TEACHING EXPERIENCE

- Assistance as *demonstrator* and *amanuensis* to a visually impaired student for modules *Programming in C++* (autumn term 2008), *Object-oriented Design and Programming* (spring term 2009) and the *Fundamentals of Computing* exam (spring term 2009) at the Department of Computer Science and Information Systems, Birkbeck, University of London
- Assistance and tutoring for graduate students at the Ono Laboratory, Japan Advanced Institute of Science and Technology (JAIST). A mentor and informal co-supervisor of Master Theses of Hironori Yonemori and Tomoyuki Suzuki
- Organizer of several student seminars at JAIST. In charge of the *Modal Logic* seminar
- Assistant teacher for the *Model Theory* course, spring semester 2002, Department of Logic, Institute of Philosophy, Jagiellonian University (UJ)

- Assistant teacher for the *Ancient Philosophy* course, spring semester 2002, Institute of Polish Philology UJ

**LANGUAGES (other than English and native)**

- Japanese (Japanese Language Proficiency Test, second level—2 kyu, 2005)
- Russian (passive, reading: intermediate)

January 29, 2010